CLAIMS

1. A vaccine for inducing an immune response in a patient effective in the prophylactic treatment against, or therapeutic treatment of, asthma which comprises, as active agent, immunogenic lipoarabinomannan (LAM) formulated for respiratory administration to said patient.

2. A vaccine as claimed in claim 1 wherein the immune response induced is not, or not predominantly, a CD1 mediated immune response.

3. A vaccine for reducing the severity of asthma comprising an immunologically effective amount of immunogenic LAM formulated for respiratory administration.

4. A vaccine for reducing the risk of developing asthma comprising an immunologically effective amount of immunogenic LAM formulated for respiratory administration.

5. A vaccine according to any one of claims 1 to 4 in which said immunogenic LAM is isolated from a mycobacterium.

6. A vaccine according to claim 5 in which said immunogenic LAM is isolated from an *M. bovis* organism.

7. A vaccine according to claim 6 in which said *M. bovis* organism is *M. bovis* strain AN5.

8. A vaccine according to any one of claims 1 to 7 in which said immunogenic LAM is free of bacterial nucleic acid.

9. A vaccine according to any one of claims 1-4 wherein said LAM contains, as its saccharide component, from 27% to 52% mannose and from 73% to 48% arabinose.

10. A vaccine according to any one of claims 1-4 wherein said LAM contains, as its saccharide component, from 40% to 50% mannose and from 60% to 50% arabinose.

11. A vaccine according to any one of claims 1-4 wherein said LAM contains, as its saccharide component, approximately 45% mannose and approximately 55% arabinose.

12. A vaccine according to any one of the preceding claims in which said immunogenic LAM is a fluid.

13. A vaccine according to any one of the preceding claims which further comprises a respiratorially acceptable adjuvant.

14. A vaccine according to any preceding claim which further comprises a secondary immunogen selected from one or more Th1 type immune response inducing substances.

15. A vaccine according to claim 14 in which *Mycobacterium bovis* (Bacillus Calmette-Guerin) is included as said Th1 type immune response inducing substance.

16. A method of prophylactically treating a non-asthmatic patient against asthma which comprises the step of inducing an immune response in said patient by respiratorially administering an effective amount of immunogenic LAM.

17. A method of therapeutically treating asthma in a patient which comprises the step of inducing an immune response in said patient by respiratorially administering an effective amount of immunogenic LAM.

18. A method according to claim 16 or 17 in which the immune response induced is not, or not predominantly, a CD1 restricted immune response.

19. A method according to any one of claims 16-18 in which said immunogenic LAM is administered in the form of a vaccine as claimed in any one of claims 1 to 15.

20. A method according to any one of claims 16-19 in which said immunogenic LAM is administered by inhalation through the mouth of said patient.

21. A method according to any one of claims 16-19 in which said immunogenic LAM is administered intranasally to said patient.

22. The use of immunogenic LAM in the preparation of a medicament for the therapeutic treatment of asthma.

23. The use of immunogenic LAM in the preparation of a medicament for prophylactically treating a non-asthmatic against developing asthma.

24. Use according to claim 22 or 23 in which said immunogenic LAM is isolated from a mycobacterium.

25. Use according to claim 24 in which said mycobacterium is an *M. bovis* organism.

26. Use according to claim 25 in which said *M. bovis* organism is *M. bovis* strain AN5.

27. Use according to any one of claims 22 to 26 in which said immunogenic LAM is free of bacterial nucleic acid.

28. Use according to claim 22 wherein said immunogenic LAM contains, as its saccharide component, from 27% to 52% mannose and from 73% to 48% arabinose.

29. Use according to claim 22 wherein said immunogenic LAM contains, as its saccharide component, from 40% to 50% mannose and from 60% to 50% arabinose.

30. Use according to claim 22 wherein said immunogenic LAM contains, as its saccharide component, approximately 45% mannose and approximately 55% arabinose.

31. Use according to any one of claims 22-30 wherein in preparing said medicament said immunogenic LAM is combined with a respiratorially acceptable adjuvant such that the medicament is formulated for respiratory administration.

32. A device for prophylactically or therapeutically treating asthma which includes a container from which a vaccine according to any one of claims 1-15 is dispensable to the airways of a patient in need of such treatment.

33. A device according to claim 32 from which said vaccine is dispensable by inhalation through the mouth of a patient.

34. A device according to claim 32 from which said vaccine is intranasally dispensable.

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